

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
13 May 2004 (13.05.2004)

PCT

(10) International Publication Number  
**WO 2004/040339 A1**

(51) International Patent Classification<sup>7</sup>: **G02B 5/30**, C09K 19/02 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number: PCT/IB2003/004430

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 7 October 2003 (07.10.2003)

(25) Filing Language: English

Declaration under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NJ, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

(26) Publication Language: English

(30) Priority Data: 1021807 1 November 2002 (01.11.2002) NL

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



A1

**WO 2004/040339**

(54) Title: METHOD OF MANUFACTURING OF A CHOLESTERIC LAYER

(57) **Abstract:** The invention pertains to a method of manufacturing a layer of a cholesterically ordered polymer material, in which the material is oriented in such a way that the axis of the molecular helix of the cholesterically ordered material extends transversely to the layer, wherein the method comprises the steps: a) providing a layer comprising a cholesterically ordered mixture of a low-molecular weight polymerizable material and a high-molecular weight material, which high-molecular weight material comprises a quantity of a convertible group, which in its non-converted and in its converted state determines the pitch of the material to a different extent, the conversion of said high-molecular weight material being inducible by radiation, and the layer absorbs said radiation; b) irradiating the layer to convert at least a part of the convertible groups in the irradiated parts of the layer; c) letting at least the low-molecular weight material reorient to form the required helical structure; d) at least partially polymerizing and/or cross-linking the low-molecular weight material with itself and/or with the high-molecular weight material to freeze in the formed structure.